REMARKS

The paper is submitted in response to the Office Action mailed on January 30, 2006. Claim 1 has been amended and claim 11 has been added. Claims 1-11 now remain in the application. In view of the foregoing amendments, as well as the following remarks, Applicant respectfully submits that this application is in complete condition for allowance and requests reconsideration of the application in this regard.

Claims 1, 4, 5, 8 and 10, of which claim 1 is independent, were rejected under 35 U.S.C. § 102(b) as being anticipated by Losey U.S. Patent No. 3,903,803 ("Losey"). In the Office Action, the Examiner asserts:

> Losey teaches a pyromechanical separating element (fig. 9, 49), having a hermetically sealed pyrotechnic pressure element (58), which is installed in a housing (52) and has a gas-forming pyrotechnic charge, and a detachable latching pin (63) which is separated from the pressure element (58) by a driving volume (formed by 53 and 57) and is inserted into the housing, wherein a first securing point is arranged on the housing (fig. 8, whereby the left band 28 is attached to housing 52) and a second securing point is arranged on the latching pin (fig. 8, whereby the right band 28 is attached to the latching pin (63) and is anchored on the housing by way of an arresting and force limiting element (the engagement of the threads of screw (63), with the corresponding threads on the housing).

(Office Action, p. 2). Although Applicant disagrees with the Examiner, Applicant has amended independent claim 1 to more clearly define over Losey.

Losey discloses a separation means for separating portions of a missile during its flight to a target. In particular, the separation means permits the separation of a re-entry body (17) from an equipment section (16) of the missile. To this end, the re-entry body (17) and the

equipment section (16) are coupled by a segmented locking band (27) comprising three segments (28). The ends of the three segments (28) are coupled by an interconnecting means (49) that incorporates an explosive actuated means for fracturing the interconnecting means (49) and releasing the segments (28) of the locking band (27) so as to permit separation of the re-entry body (17) from the equipment section (16).

With particular reference to Fig. 9 of Losey, the interconnecting means (49) includes a housing (51) having a T-shaped portion (52) integrally formed with housing (51). Housing (51) includes coaxial bores (53, 54) wherein bore (53) is adjacent T-shaped portion (52) and bore (54) is threaded. A spacer block (57) is positioned in bore (54) and seals off bore (53) to form a chamber for holding explosive mixture (58). A lock nut (62) includes outer threads that engage the threads in bore (54) and inner threads that engage the threads on T-bolt (63). The housing (51) further includes a groove (56) that operates as a fracture point or line on the housing (51).

In operation, an electrical impulse is sent to the explosive mixture (58), such as through electrical wires (59), that causes the explosive mixture (58) to detonate. This in turn causes rupture of the housing (51) in the area of the groove (56) for forcing apart the T-portion (52) and the T-bolt (63). This releases the segments (28) of locking band (27) for separation of the re-entry body (17) and the equipment section (16).

Independent claim 1 has been amended to more clearly define the invention recited in claim 1 over Losey. In particular, claim 1 has been amended to recite "wherein ignition

of the pyrotechnic pressure element disrupts the arresting and force-limiting element so that the latching pin separates from the housing." The separation means disclosed in Losey operates by fracturing the housing of the interconnecting means at a line of weakness, which in Losey is identified as the groove (56). Losey states "upon receipt of the proper electrical impulse, explosive mixture 58 is detonated, thereby causing rupture of the housing 51 in the area of the groove 56..." (Col. 5, lns. 48-51). Thus, the separation of the interconnecting means is accomplished by fracturing the housing along a line of weakness formed by a groove in the housing.

As discussed in the present application, these type of pre-weakened, predetermined breaking points present some problems. For instance, due to temperature-expansion/contraction processes and alternating mechanical loads, the predetermined breaking points represent an unintentional weakening for long-term operation. This problem is in turn addressed by increasing the thickness of the wall along the breaking point such that very high pressures are required to fracture the housing. (See Application, p. 1, lns.14-25). The invention of claim 1, however, is meant to overcome these problems associated with fracturing the housing along a predetermined point or line.

To this end, the separating element of claim 1 does not separate by fracturing the housing along a line of weakness, as disclosed by Losey. Instead, "the latching pin is anchored to the housing by way of an arresting and force-limiting element" and "ignition of the pyrotechnic pressure element disrupts the arresting and force-limiting element so that the latching pin

separates from the housing." In Losey, the threads of the screw (63) are not disrupted by the detonation of the explosive mixture (58) so as to separate the screw (63) from the housing (51). The disclosure of Losey teaches just the opposite, i.e., the screw (63) and housing (51) remain in tact after the detonation of the explosive mixture (58) and separation occurs at groove (56). Accordingly, Applicant submits that Losey does not teach or suggest the combination of elements recited in amended independent claim 1 and the rejection should be withdrawn.

Moreover, as claims 4, 5, 8 and 10 depend from allowable independent claim 1 and further as each of these claims recite a combination of elements not taught or suggested by Losey, Applicant submits that these claims are allowable as well.

Claims 2, 3, 6, 7 and 9 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Losey in view of Beart U.S. Patent No. 3,072,168 ("Beart"). All of these claims depend from independent claim 1. Moreover, as Beart is directed to a lock washer, Beart does not cure the deficiency of Losey noted above. Thus, for the same reasons as provided above, Applicant submits that these claims are allowable as well.

Claim 11, which also depends from claim 1, has also been added through this amendment. Claim 11 recites that the "driving volume comprises a gas." Losey does not teach or suggest that the driving volume be a gas. Instead, Losey teaches that the space between the explosive mixture (58) and the lock nut (62) be filled with spacer block (57), which is shown in Fig. 9 as being solid. Accordingly, Losey alone or in combination with Beart does not teach or suggest the combination of elements recited in claim 11 and therefore should be allowable.

In view of the foregoing amendments to the claims and remarks given herein, Applicant respectfully believes this case is in condition for allowance and respectfully requests allowance of the pending claims. If the Examiner believes any detailed language of the claims requires further discussion, the Examiner is respectfully asked to telephone the undersigned attorney so that the matter may be promptly resolved. The Examiner's prompt attention to this matter is appreciated.

Applicant hereby petitions for a one-month extension of time, payment of the fee for which is made on the attached Electronic Fee Sheet. If any additional charges or credits are necessary to complete this communication, please apply them to Deposit Account No. 23-3000.

Respectfully submitted,

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